Michigan Stream Team Meeting Minutes
January 16, 2008

Attendees:

Ralph Reznick	Bethany Matousek
Joe Rathbun	Cyndi Rachol
John Suppnick	Steve Rheaume
Kathleen Ryan	Andrea Ania
Mary Widell	Jim Selegean
Pat Fowler	Jessica Mistak
Sean Duffy	Heather Rawlings
Joe Haas	Sharon Hanshue
Coreen Strzalka	Kyle Kruger
Dave Fongers	Troy Zorn

Commitments/Action Items:

- **Joe R. will revise the field protocol to include a discussion of surveying ungaged biosurvey locations, and the use of stream stability assessment tools in station reconnaissance. A first draft will be submitted to the Team by April 1, 2008.**
- **Joe R. will create a list of biosurvey locations with "excellent" macroinvertebrate communities for the Upper Peninsula, by April 1, 2008.**
- **Sharon and Kathy will take the lead on training issues; priorities, capacity of Team staff or others to provide training, etc.; by the next meeting.**
- **Cyndi and Kristine will make a presentation on the 2007 reference curve project data at the next meeting.**

Next meeting:

Wednesday March 12, at the US FWS office in Lansing

Meeting Minutes

The meeting was held at the US FWS Office in Lansing. Introductions were made, and the meeting proceeded through the agenda.

Item 1 – Updating the Field Protocol

Previous discussions of the reference curve field work conducted to date revealed that our focus on locations with stable USGS gages resulted in two kinds of gaps; few stations in several parts of the state, and a bias towards larger

streams. It was decided previously that one potential solution was to consider locations with "excellent" macroinvertebrate populations, as determined during MDEQ's annual biosurveys. **Joe R.** provided a list of 50 such locations in three regions (the Southern Michigan/Northern Indiana Drift Plains ecoregion, the lower peninsula's Huron River watershed, and the Lower Peninsula portion of the Northern Lakes and Forests ecoregion) sampled since 2000 to **Cyndi**, who mapped them and confirmed that many would help fill in geographic gaps. It was also noted that many of the stations were on small streams (< 25 feet wide) that have been undersampled to date. **Joe R.** will produce a similar list of stations for the Upper Peninsula portion of the NLAF ecoregion, and will also try to find appropriate stations in the Saginaw Bay area and in southeast Michigan, by April 1, 2008.

It will be necessary to recon these locations, and the lack of a gage complicates assessing whether the hydrology and geomorphology channel is sufficiently stable for our purposes. To help address that, **Joe R.** led a discussion of a handout describing four stream stability assessment tools that the MDEQ Nonpoint Source Unit has developed for their grantees. The four tools are:

- Hydrologic flashiness
- Regional reference curves
- Rosgen's Bank Erosion Hazard Index (BEHI) observations
- Tractive force calculations

Of the four, tractive force calculations generated the most discussion. The tractive force equation is a simplification of the boundary shear stress equation, and calculates the incipient particle diameter (the particle size mobile at a specified discharge). Comparing this particle size to a measured D_{50} or D_{84} provides an assessment of channel stability.

It was agreed that **Joe R.** will add text to the field protocol describing the use of MDEQ biosurvey locations in the reference curve project, and the application of the stream stability assessment tools to our usual station reconnaissance. A first draft will be completed by April 1, 2008.

Dave asked whether he should be calculating bankfull discharge at ungaged stations by modeling the watershed; and if so, should this be added to the field protocol. **Sean** advised that Dave perform this calculation, but that it does not need to be described in the protocol.

Jessica noted that the field protocol should also be modified to reflect earlier decisions on surveying in the vicinity of islands (described in a note by **John**), and whether the surveyed reach must include the gage (no, as long as there is no significant inflow between the gage and the surveyed reach). **John** will modify the protocol to account for these two clarifications, and supply that to **Dave.**

Another issue that should be included in the field protocol is how to deal with a "veneer" of sand over larger particles when doing a pebble count. **Chris** is checking with Dave Rosgen for guidance.

Item 2 – Training

Coreen provided a description of a 3-day course focusing on channel stability, scour and erosion at bridges, to be held March 4-6 at the MDOT facility in Lansing. The course is sponsored by MDOT, and preference will be given to MDOT employees although there may be room for others to attend. The cost is $400, though that may be waived for State employees. Contact **Coreen** for more details.

Sharon led a discussion of training priorities, which include the basics of river mechanics ("How does a river work?"), proper bank stabilization/habitat improvement techniques, and post-BMP monitoring. By the March meeting, **Sharon** and **Kathy** will:

- Identify training priorities, audience, messages, and capacity
- Investigate the capacity of groups like Tip of the Mitt, Conservation Resource Alliance and other RC&Ds, to conduct training
- Assess grant or permit requirements that could be addressed by training.

Item 3 – Regional Reference Curve Project Update

Cyndi and **Kristine** have started compiling the data collect in 2007 and will make a presentation on it at the next meeting.

Item 4 – Issues of Importance from Those in Attendance

Joe H. noted that the list of training opportunities on the Stream Team webpage needs to be updated.

Dave completed an updated peak flow analysis, including gages with shorter periods of record, which is now posted on the Team website.

Next Meeting:

The next Stream Team meeting will be on **Wednesday March 12**, from 9:00 to 12:00 at the US FWS offices in Lansing.

(Recorded by Joe Rathbun, MDEQ)

Michigan Stream Team Meeting Minutes
April 22, 2008

Attendees:

Ralph Reznick	Bethany Matousek
Joe Rathbun	Cyndi Rachol
John Suppnick	Andrea Ania
Kathleen Ryan	Heather Rawlings
Pat Fowler	Sharon Hanshue
Joe Haas	Kristine Boley-Morse
Dave Fongers	Chris Freiburger
Chad Kotke	Julia Kirkwood

Commitments/Action Items: Joe R. will get text for selecting ungaged locations for reference curve measurements to Dave, for inclusion in the field protocol.

Next meeting:

Wednesday July 23; location to be announced; maybe along the Battle Creek River near Charlotte

Meeting Minutes

The meeting was held at the US FWS Office in Lansing. Introductions were made, and the meeting proceeded through the agenda.

Item 1 – Summer Field Schedule

Kristine reported that a call to discuss the stations to be surveyed in 2008 was held between US FWS, MDEQ, MDNR, USGS and the ACOE. Station reconnaissance visits will resume the week of April 28. **Jessica** and **Kyle** plan to survey some locations in northern Michigan in early August, and **Jim** will survey in July.
Cyndi noted that you can now access stage heights at the real-time USGS gage stations, via text message. **John** noted that 15 minute flow data are now available online at the USGS web site.

Item 2 – Training

Sharon and **Kathy** had compiled a strawman training overview that has options centered on four different audiences:

- Train State and Federal Regulatory staff
    - Focused on improving capacity to review permits

- Train non-governmental organizations
    - Focused on broad, introductory training, leading to more specific training later
- Train Steam Team members
    - Focused on more advanced training than we've gotten from the Minnesota courses
- Open to all
    - Focus needs to be defined, given varying levels of experience

Joe H. led a discussion of training for State and Federal staff, perhaps with Sandy Verry as the trainer. **Sharon** recommended letting the needs of the MDNR Fisheries staff and the MDEQ's Land and Water Management Division (LWMD) permit staff dictate which training option we pursue first. **Ralph** noted that if that's the audience, we should include a review of the Natural Channel Design (NCD) checklist by Will Harmon and Richard Starr.

Dave and **Joe H.** led a discussion of LWMD's needs and limits. **Heather** recommended that staff training include coverage of the NCD checklist and the US Forest Service's 4 CD on identifying bankfull, as well as providing contact names of trained staff within the agencies. **Bethany** wondered if we would include consultants in any free or nearly free training we sponsored, and it was decided that no, consultants should pay for any training we arrange. The group decided that we would update the training options portion of the Team's website (Rosgen, Minnesota, North Carolina State University, US FWS).

Sharon, **Joe H.**, **Chris**, **Kathy**, and **Dave** will continue to discuss LWMD's training needs, and maybe integrate into MDNR's upcoming Stream Habitat Improvement Management (SHIM) training.

<u>Item 3 – Rosgen Training in 2009, and other options</u>

Chris reported that Dave Rosgen has expressed interest in conducting the first of his courses in the UP, around the last week of September or first week of October, 2009. He isn't asking for any money upfront. We would help with course logistics, including the venue and identifying four 400' stream reaches for the field exercises.

Heather stated that the US FWS's NCTC training folks are another option, perhaps for June 2009; they can conduct their geomorphology course away from the US FWS training facility in West Virginia, and Rosgen accepts it as equivalent to his own first course.

Sharon encouraged consideration of conducting a 1 day introductory course, in the Fall of 2008, presumably conducted by the Team.

Pat F. pointed out that as we provide training for permitees, we need to decide what level of training is sufficient for them to design projects – and require them to state their previous training and other qualifications.

Item 4 – Protocol Update Progress

Joe R. had previously sent draft text describing how to select locations for reference curve measurements at ungaged locations, focusing on locations with known "excellent" macroinvertebrate populations. He received limited comments, and will get the revised text to **Dave** for inclusion in the Team's field protocol.

Item 5 – Natural Channel Design Checklist

Ralph discussed the Natural Channel Design Checklist, written by Will Harmon of Baker Engineering and Richard Starr of the US FWS. It seems to be good for reviewing permits and also as a training outline. **Heather** recommended that it could be a foundation for training State staff.

Item 6 – Team Membership

Ralph and **Dave** again raised the issue of Stream Team membership, based on an inquiry from a consultant. It was agreed that although all our meetings are open to the public, membership will continue to be restricted to government agencies and Tribes.

It was agreed that **Dave** will add the Army Corps's logo to the cover page of the Team's field protocol. **Dave** also discussed the email list, and it was agreed that contacts would be added or deleted based only on direct requests from the person involved.

Item 7 – Suggested Plant List for Stream Restoration

Joe H. reviewed, and asked for comments on, a list of plant species that LWMD has prepared for stream mitigation projects. It is intended for use in the southern Lower Peninsula, and other lists will be produced for elsewhere in the state. **Pat F.** suggested that elm be removed from the list given its susceptibility to Dutch elm disease, and also asked why listed species (endangered, threatened, and special concern) weren't included (because it's intended for mitigation projects, and LWMD isn't looking to encourage populations of endangered species in projects that are subject to later manipulation or even failure.)

Item 8 – Issues of Importance from Those in Attendance

- **Joe R.** will soon finish the stream stability guidance document he reviewed at an earlier Team meeting, and will send it out to the Team

when it's complete. He will also send out information on the State of Minnesota's excellent book "Plants for Stormwater Design – Species Selection for the Upper Midwest". It is available for download at:

http://proteus.pca.state.mn.us/publications/manuals/stormwaterplants.html

It, and the second volume, can also be ordered from:

www.greatrivergreening.org/_downloads/PSD%20Order%20Form.PDF

- **Chris** and LWMD's Jerry Fulcher met with staff from Wisconsin, Minnesota, The Nature Conservancy, and the US Forest Service to discuss fish passage at culverts. Minnesota has regulations on culvert placement, and Wisconsin is developing guidelines for WDOT. Michigan's agencies are discussing this issue, and as a start want to make sure that the dimensions of the natural channel are carried through the road crossing. Minnesota and Wisconsin are conducting a study of fish passage at road crossings that will be applicable in all the Great Lakes states.
- **Cyndi** stated that USGS is helping the Army Corps collect bedload and suspended load samples in the Boardman River, for FLOWSED and POWERSED modeling. USGS has also received a request for similar assistance on the Clinton River. Cyndi asked if sediment rating curves might be useful for other projects conducted by Stream Team members (resounding yes) and if there were any specific projects these measurements might be collected for (no). USGS staff have access to internal grant money if they can get 50% match in outside money. If anyone can think of a sediment loading-related study and has a line on some match, contact Cyndi.

Next Meeting:

The next Stream Team meeting will be on **Wednesday, July 23**, from 9:00 to 12:00. The location will be announced; perhaps in or near Charlotte, to see the dam removal and stream restoration site on the Battle Creek River.

(Recorded by Joe Rathbun, MDEQ)

Michigan Stream Team Meeting Minutes
October 30, 2008

Attendees:

Ralph Reznick	Cyndi Rachol
Joe Rathbun	Steve Rheaume
John Suppnick	Travis Dahl
Paul Wessel	Sharon Hanshue
Mario Fusco	Kristine Boley-Morse
Byron Lane	Chris Freiburger
Chad Kotke	Julia Kirkwood

Commitments/Action Items: Chris will check if MDEQ-LWMD has training money available to support State staff for the 2009 Rosgen training in Marquette.

As a group we will discuss sediment transport issues with upcoming dam removal projects, at our next meeting. Presumably this will require Chris to prepare a list of coming projects.

Next meeting:

Wednesday January 14, 2009, 9:00 – 12:00; location to be announced

Meeting Minutes

The meeting was held at the Charlotte City Hall. Introductions were made, and the meeting proceeded through the agenda.

Item 1 – Regional Reference Curve Project Update

Cyndi and **Kristine** led a discussion of the reference curve project. Field data collection is complete, though additional data are needed from Fish Creek and Augusta Creek. **Cyndi** noted that RiverMorph has limited capabilities for statistical analysis, and that they will be trying other statistical programs (S Plus?). **Cyndi** also noted that the estimated bankfull discharge data are not consistent with the flood frequency bankfull discharge data (Q_{BF} often > 2 years), and that bankfull estimates from the pool and riffle cross-sections are not consistent with bankfull estimates from the longitudinal profiles. **Travis** suggested that dimensions of some channels in the northern part of the state might be still recovering from logging of decades past, and that return intervals for Michigan streams might really be longer than the western streams surveyed by Rosgen and Leopold. **Chris** suggested that annual precipitation might be increasing in the Midwest. **Kristine** also noted that all of the streams surveyed to

date are C streams. **Joe** noted that he surveyed some stable E channels on the Keweenaw Peninsula as part of a stamp sand restoration project, and will look into providing those data to the Team.

It was noted that the Team has only resurveyed two streams for QC purposes (Black River and Looking Glass River). **John** suggested that it would be adequate to resurvey just the longitudinal profile and the riffle transect, plus tie it all into the USGS gage, and it was agreed that future QC surveys would use this abbreviated procedure.

The project timeline was discussed, and it is expected that a draft report or at least significant data analysis will be available in December 2008, and that a final report is prepared by March 2009.

Item 2 – Report on the Dam and Sedimentation Workshop

Cyndi and **Joe** led a discussion of the workshop on dam removals and sedimentation issues they attended in Portland, OR in October. Over 40 attendees from across the country discussed the need for guidance on assessing the magnitude sediment transport issues in dam removal projects, and committed to producing detailed "decision trees" to facilitate assessment of the effects of sediment transport both within the impoundment area and downstream of the dam. A draft document is expected in early winter and a final document by spring 2009. The draft document will be provided to the Team for review, and comments should go to Cyndi and Joe. It is hoped that the protocols will be applied to several case studies during the 2009 field season, and another meeting of the group is planned for fall 2009 to assess the results. The protocols should be applicable to historic as well as on-going and future dam removal projects, and **Sharon** suggested that the dam removals on the Kalamazoo River might be a good case study.

Travis noted that a lot of effort is going into assessing sediment transport issues on the Boardman River and that **Jim S.** is heading that up.

Item 3 – Mecklenburg and Ward Channel Restoration Techniques

In September **Ralph** and **Joe** attended several presentations on channel restoration techniques by Dan Mecklenburg (Ohio DNR) and Andy Ward (Ohio State University), at a conference in Columbus, OH. Dan and Andy basically originated the idea of creating 2-stage ditches to minimize bank erosion and sediment transport. Interesting aspects included:

- Self-forming channels, wherein a very wide low-gradient "channel" (floodplain, really) is excavated and a channel allowed for form on its own over time.

- Using channel restoration to take streams off the 303(d) list, by creating instream habitat which improves the macroinvertebrate and/or fish communities. Apparently multiple private contractors are doing these projects, though by state law such projects have to show restored biotic communities within 5 years of construction. This can be unrealistic given organism colonization rates, etc.

Pat Durack (MDEQ-LWMD's new representative, replacing Joe Haas) has arranged for Dan Mecklenburg to visit several stream restoration sites in southeast Michigan on November 19, including the 2-stage ditch installed a few years ago in Hillsdale County by Ohio State and The Nature Conservancy.

Item 4 – Training Updates

A general discussion was held on training options for 2009. Rosgen Level 1 training will be held in Marquette October 12 – 16, 2009. **Chris** noted that the Minnesota Pollution Control Agency wants to "split" the course with Michigan, taking half of the 40 slots and hosting a Level 2 course in Minnesota in 2010. **Chris** also stated that Rosgen has agreed to give Michigan staff first dibs on the available slots and a discount if we fill them by a certain date. MDNR expects to send 5 or 6 staff, but MDEQ will not be able to send anyone on state money if there is a registration fee (union support is a possibility for some).

Chris noted that **Heather** was looking into the Rosgen 1 training provided by US FWS staff in Shepherdstown, WV; their cost may be lower. **Update:** **Heather** called Joe to day that she will obtain the 2009 course schedule at Shepherdstown and provide that to the Team. The usual alternatives were also discussed, including Sandy/Luther's courses, and Stream Team staff.

Joe is looking into WARSSS (Watershed Assessment of River Stability and Sediment Supply) training by the Canaan Valley Institute (WV) staff. **Chris** noted that the Minnesota Pollution Control Agency requires WARSSS for all appropriate Section 319 projects (a.k.a., nonpoint source projects), and **Julia** noted that a few MDEQ grantees have used WARSSS while preparing watershed management plants and agreed that Level 1 WARSSS is a good tool for watershed planning. **Update:** **Joe** has since spoken to a consultant who took CVI's WARSSS training, and was disappointed.

Chris is checking to see if MDEQ-LWMD has training money that could be used for training, and will report back at the next Team meeting. The issue of how to use this money, if available, was discussed, and it was decided that it would be applied to the 2009 Rosgen training.

Item 5 – Next Steps for the Stream Team

Ralph solicited suggestions for future Stream Team activities, now that the first phase of the regional reference curve project is winding down. He suggested 3: (a) data from ungaged sites for the curve project, (b) sediment rating curves or other sediment tools, and (c) getting involved in stream restoration after dam removals. Suggestions included:

- A clearinghouse of data from dam removal projects, including lesson learned information (**John**). **Cyndi** noted that UC-Berkeley has offered to construct a nationwide database with such information, though **Sharon** recommended that we'd want to keep our local data close at hand. **Sharon** also stated that we need monitoring guidance for dam removal projects. **Cyndi** reminded us that Bryan Burrough's PdD thesis has information on this topic, and it's on the web. **Update:** See this link for another good document on this topic:

http://www.gulfofmaine.org/streambarrierremoval/

- **Chris** stated that we can accomplish Ralph's suggestion (c) with internal resources, but will need external money for (a) and (b). He also noted that Paul Seelbach is interested in improving the science on sediment rating curves. There was also discussion the sediment transport issues are very pertinent to dam removal projects, and that we would discuss upcoming removals at our next meeting.
- **Steve** noted that USGS can fund up to 50% of certain research projects, though as always they can't compete with the private sector.
- There was a group discussion on funding surveys at ungaged locations, by either extending the current reference curve project contract, or adding this work to another existing project, or putting out a separate statewide proposal. This issue was not resolved.

Item 6 – Request to Review Huron River – Baraga County Proposal

Ralph discussed a proposal to assess an unusual geomorphic situation in the Huron River watershed in Baraga County, and solicited comments on the proposal by December 1.

Item 7 – Issues of Importance from Those in Attendance

None

The meeting then adjourned and **Kristine** led a tour of the Battle Creek River restoration project; dam removal and channel relocation.

Next Meeting:

The next Stream Team meeting will be on **Wednesday, January 14, 2009**, from 9:00 to 12:00. The location will be announced.

(Recorded by Joe Rathbun, MDEQ)